This product may be purchased from Connevans Limited secure online store at www.DeafEquipment.co.uk

DeafEquipment.co.uk
Solutions to improve the quality of life

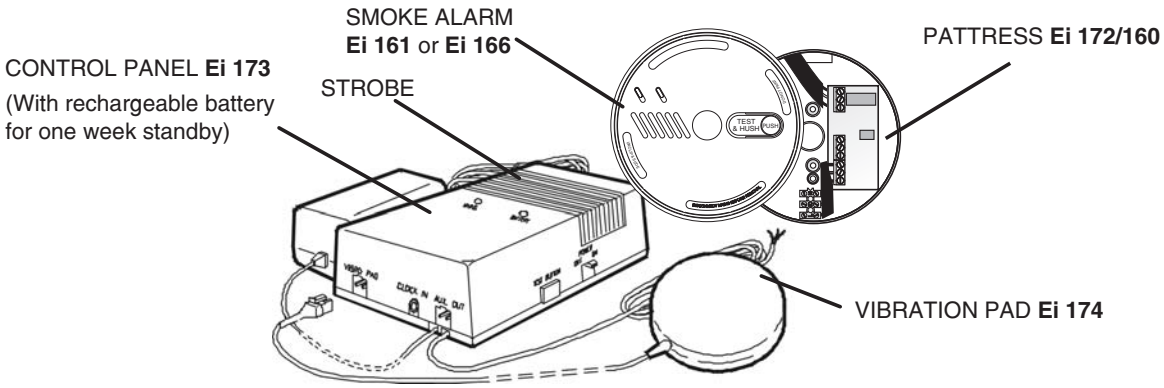
Professional

Instruction Leaflet

Smoke Alarm Systems for the Deaf & Hard of Hearing

- with Strobe & Vibrator

Ei 169/160 BASIC SYSTEM (requires a Smoke Alarm Ei161 or Ei166)
Ei 170/160 with MAINS IONISATION SMOKE ALARM **Ei 161**
Ei 171/160 with MAINS OPTICAL SMOKE ALARM **Ei 166**



Introduction

This leaflet describes the installation of the Ei 169/160, Ei 170/160 and Ei 171/160 Systems.

Important: Read all instructions before installing. This leaflet must be left with the end user after installation.

N.B. If the system is not being used for some tme the Control Panel power switch must be in the off position. This will prevent the battery from being totally depleted and possibly damaged.

Do **not** turn on until it is fully wired.

The systems consist of:-

Ei **169 / 160**
Ei 173 Control Panel (with built in strobe)
Ei 174 Vibrator Pad
Ei 172/160 Pattress for Smoke / Heat Alarm Interface (this requires an Easi-fit Alarm to operate i.e. Ei 140, 141, 146, 161 or 166)

Ei 170 / 160
Ei 169/160 with a Mains Ionisation Smoke Alarm Ei 161

Ei 171 / 160
Ei 169/160 with a Mains Optical Smoke Alarm Ei 166

1. Location & Installation

The Control Panel should normally be fixed such that the internal strobe light can be seen from the bed and the vibration pad can be placed under the mattress or pillow. It has to be powered from the mains (230 VAC) so a suitable power point or junction box must be available to which it can be permanently connected. The Smoke Alarm must be located as described in the Smoke Alarm instructions supplied. Cable (10 m) is supplied to connect between the Control Panel and the Ei 172/160 Pattress for the smoke alarm.

This can be extended up to 50 m (20 ohms max.) with suitable low voltage cable if required. The Smoke Alarm supplied with the system may be interconnected with other Ei mains powered smoke/heat alarms up to a maximum of 12 alarms (see below for details) in total. Many dwellings require more than one smoke alarm for minimum protection. See the smoke alarm instruction leaflet for detailed advice on, interconnection, maintenance etc.

Warning: This mains operated system should be installed and interconnnected by a qualified electrician in accordance with the Regulations for Electrical Installations published by the Institute of Electrical Engineers (UK). Failure to install this system correctly may expose the user to shock or fire hazards. Mains (230VAC) rated cable must be used for the interconnect wire along with the mains itself.

Control Panel

The Control Panel should be permanently fixed to the wall using the screws and plastic plugs enclosed. The screws should be spaced 114 mm (4.5 in) vertically apart. The top screw should be 27 mm (1.1 in) below the top surface of the control panel when installed. The screws (large heads) should be screwed into the wall leaving a gap of approximately 4 mm (0.15 in) under the head. Fit the keyhole slots on the back of the control panel over the screw heads and slide the panel down vertically into position.

The mains adaptor can be plugged into a socket. The socket must not be used for any other equipment and it must always be switched on.

It is preferable to permanently wire the unit into a mains junction box. In this case remove the plug and wire as follows.

Warning: First remove the power to the circuit at the distribution board. If you are in any doubt about how to do this, get help from a qualified electrician.

Connecting to mains junction box.
The mains lead wires are colour coded as follows:

brown: live
blue: neutral

The wire which is coloured blue must be connected to the terminal/wire which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal/wire which is marked with the letter L or coloured red.

The apparatus is not to be earthed, so no connection is to be made to terminals or wires marked with the letter E, the symbol ⏚ or coloured green or green and yellow.

Bring the low voltage wiring from the control panel to where the smoke alarm is to be located. Route all wires neatly and securely along the walls and ceilings.

Note: Turning off the power switch on the Control Panel does not switch off the apparatus from the supply mains. The switch removes the AC and battery power from the Control Panel, but the mains transformer remains connected to the supply mains.

Vibration Pad

Plug the vibration pad into its locking socket on the control panel. Place the vibration pad under the pillow or mattress. It is important that the person in the bed can feel the vibration - check it is sufficient to wake a person by lying on the bed and pressing the test button on the control panel - see also "Testing your system". Some mattresses may not transmit sufficient vibration, and in these cases it should be fitted under the pillow. **Note:** During testing, or in an actual alarm situation, the pad pulses on and off for greater effect on sleepers.

Mains Smoke Alarm Interface Pattress Ei 172/160

The pattress is used to mount the smoke alarm in its location, to connect it to the mains and interconnect wires, and to connect it to the wires from the Ei 173 control panel. (The connections from the non-isolated mains powered smoke alarms, to the low voltage control panel wires are through an opto-isolator in the Ei 172/160 for electrical safety).

PATTRESS WIRING

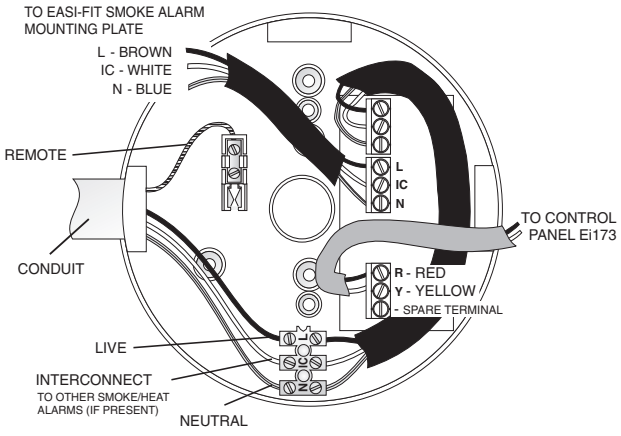


Figure 1

1. Choose the mounting position following the siting instructions in the Smoke Alarm leaflet. Remove the power from the circuit you plan to use.

2. Where the incoming mains and interconnect wires are on the surface of the ceiling or wall the appropriately sized ducting/conduit must be chosen to mate with the unit.

3. The low voltage wiring from the control panel must not be run in the same conduit as the mains/interconnect wires.

4. Using a sharp knife remove material from the appropriate knockouts making sure that there is no gap, either where mated with the ducting/conduit or with the low voltage wires. There are three knockouts and one on the rear.

5. Screw the pattress to the surface using the two screws and plastic plugs supplied.

6. Figure 1 shows the connections. Connect the incoming live, neutral, and interconnect (from other smoke alarms if present) to the pre-wired connector block. The Pattress does not require an Earth. The three wires for connecting to the smoke alarm mounting plate are already wired to the pattress.

Connect the red wire (remove the small piece of insulating tape first) from the control panel to the terminal marked "R" and the yellow wire to the terminal marked "Y". The black and blue wires from the **control panel** are not used. They should both be connected to the spare terminal for extra strain relief.

7. Bring the mounting plate wires out through the hole in the mounting plate as shown in figure 2. Connect the three wires to the mounting plate terminals following the wiring colours specified in figure 2. Note: The **white interconnect wire must be connected** to the smoke alarm (even if there is only one smoke alarm on the system).

SMOKE ALARM MOUNTING PLATE

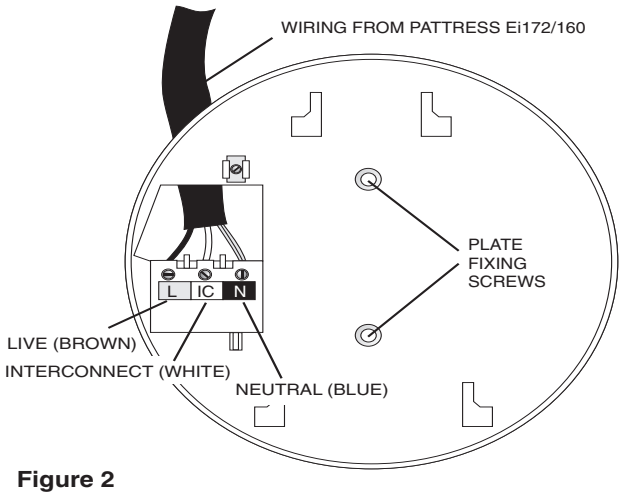


Figure 2

8. Replace the wiring cover on the mounting plate. Slide the Smoke Alarm on to the mountig plate.

Interconnecting Smoke Alarms

A maximum of 12 Ei 140,141,144,145,146,161,164,166 Smoke/Heat Alarms may be interconnected to one Ei 172/160 unit. When one alarm senses fire all interconnected units will sound and the control panel will turn on the strobe light and vibration pad (See Smoke/Heat Alarm instruction leaflet for further details on interconnection wiring).

Warning: Do not connect to any other type of Smoke/Heat Alarm. Doing this may damage the alarms and could result in a shock or fire damage.

Note 1: An alarm with battery back-up (i.e. Ei 141,144,146,161,164,166) will continue to operate during mains failure and will be able to signal the control panel if they sense fire.

The control panel also has battery back-up, so that it too will operate during mains failure.

2. Testing your System

After Installation

1. Turn on the AC mains power to the smoke alarm circuit. Check the continuous green light is visible on the smoke alarm cover. The red light on the unit will flash every 40 seconds.

2. Plug in the control panel mains adaptor (or turn on the AC mains if it is connected to a junction box). Slide the power switch on the side of the unit to the "on" position. Check the continuous green light on the control panel cover is visible.

3. Press the test button on the smoke alarm. The smoke alarm should sound and the red light will flash every second. After about 4 seconds the control panel will start flashing the strobe light and the vibration pad will turn on. Two people may be needed for this test. Interconnected smoke alarms (where present) should also be tested in similar fashion.

4. Press the control panel test button. Check the vibration pad is on and that the strobe is flashing.

Daily & Weekly Testing

We recommend that you test your system weekly by pressing all the smoke/heat alarm test buttons and checking that the vibration pad and strobe light are operating. Also check at the same time that the green power lights are visible on both the smoke alarm(s) and the control panel.

Check **daily** that the vibration pad is in its correct position by pressing the test button on the control panel.

Periodic Testing of Rechargeable Battery

The rechargeable battery takes about 20 hours to charge from the control panel when it is first powered up. The panel then maintains it in the fully charged state by continuous trickle charge. In the event of a mains failure the battery will power the system in standby for a week followed by at least 4 minutes alarm. When the mains fails, the green light is extinguished and the red light flashes rapidly on the control panel to indicate it is on battery power. If the battery is starting to be fully depleted the red light will go off to indicate the control panel is totally unpowered. The battery will last 5 years in normal use provided it is not exposed to extremes of temperature for prolonged periods, or fully discharged/charged a large number of times.

We recommend that the functioning of the rechargeable battery is checked at least yearly as follows:

(i) Ensure the control panel has been mains powered for at least the previous 20 hours for the battery to charge.

(ii) Turn off the mains power to the control panel by unplugging it or switching off the circuit at the distribution board. Check that the green light goes off and the red light starts to flash.

(iii) Press the control panel test button for 20 seconds and check the strobe flashes brightly and that the pad vibrates strongly. Check that the red light continues to flash while the test button is pressed. (Cover the strobe light with a card to stop this dazzling you while looking for the red light). This red light flashing indicates that the battery is satisfactory. If the red light goes off, or if the strobe is weak, or if the vibration is weak, the battery will need to be replaced. Contact the nearest address in this leaflet for advice about getting a replacement. Replace Ei173 control panel after 5 years operation. (See date on side of panel).

3. Troubleshooting

If the units fail any of the above tests after installation, the system has probably been incorrectly wired and/or all units are not connected. Check all wiring carefully. If the green power lights on the smoke alarm and/or the control panel are not on, check the wiring to the mains and that the mains is not off (e.g. due to a tripped circuit breaker or fuse). Check the power switch on the control panel is on.

The control panel monitors the wiring to the vibration pad and the smoke alarm pattress for faults.

(i) If the vibration pad is removed or if its wiring is open circuit, the control panel will flash the strobe.

(ii) If the wiring to the smoke alarm pattress is disconnected, open circuited or short circuited, the control panel will turn on the vibration pad and the strobe light.

There are no user serviceable parts in this unit. If it is thought to be defective, it must be returned to the manufacturer for repair or replacement (see "Product Guarantee" section).

4. Accessories and other Features

Control Panel "Aux. Output"

The auxiliary output turns on when the control panel is in alarm and can supply up to 200 mA at 12 Volts (range 10 to 14 Volts). (Note: the positive terminal is the pin next to the "Clock Input" socket). An **Auxiliary Strobe Ei 178** is available and is supplied with 10 m of cable and a suitable plug. It can be located, for example, where it is readily seen during the day (e.g. downstairs hallway). An extra **Vibration Pad Ei 174** is available with 2 m of cable and a plug for connecting it to the auxiliary socket.

Control Panel "Clock Input" socket

A suitable alarm clock (with a 5 to 24 Volts AC or DC output - electrically isolated from the mains supply) can be connected to this input socket with a 3.5 mm mono jack plug. When the alarm clock triggers, the vibration pad turns on to wake the person, but the internal strobe or auxiliary output do not turn on.This lets the user know it is a wake-up call and not a fire. Therefore the user needs only one vibration pad under their pillow or mattress.

Triggering Control Panel into Alarm Externally

A manual fire alarm switch (e.g. a glass break type) can be used to get the control panel to turn on the vibration pad and strobe light. This is done by connecting the red and yellow wires, from the control panel, together, with the switch (or volt-free relay isolated contacts). The wires from the switch can be connected into the circuit at the pattress terminals.

Note: This does not cause the smoke alarm to sound.

Adding an Ei 128R Pattress with relay to the system

The Ei 128R Pattress is used where volt-free relay contacts are required to signal to other equipment when one of the smoke alarms sense fire. For example the relay can be used to signal to a warden call system, or to turn on lights.

This requires the system to have at least two smoke/heat alarms. The first smoke/heat alarm should be mounted on the pattress Ei 172/160 as described above. The second smoke / heat alarm, interconnected to the first, should be mounted on the relay pattress Ei 128R. When any smoke alarm senses fire the Ei 172/160 pattress will signal the control panel into alarm and the Ei 128R pattress will switch its relay contacts.

(Note: The Ei 128R will not operate without a 230VAC mains supply).

Power Requirements

The typical currents at 230 VAC are

Standby	10 mA
Alarm	50 mA

5. Product Guarantee

Ei Electronics guarantees this system for 5 years from the date of purchase against any defects that are due to faulty materials or workmanship. This guarantee only applies to normal conditions of use and service, and does not include damage resulting from accident, neglect, misuse, unauthorized dismantling, or contamination howsoever caused. This guarantee excludes incidental and consequential damage. If this system should become defective within the guarantee period, it must be returned to the nearest address in this leaflet. It must be carefully packaged with the power switch on the control panel in the off position, and with the problem clearly stated along with proof of the date of purchase. We shall at our discretion repair or replace the unit. Do not interfere with the system or attempt to tamper with it. This will invalidate the guarantee, but more importantly may expose the user to shock or fire hazards.

This guarantee is in addition to your statutory rights as a consumer.

Manufactured by: **Ei Electronics.**
Shannon, Co. Clare Ireland.
www.eielectronics.com

Distributed by: **Aico Limited.**
Mile End Business Park, Oswestry,
Shropshire, SY10 8NN, U.K.
www.aico.co.uk

© 2002

P/N B14698 Rev 1